WHAT WE CLAIM IS:

1. A scheduling engine for optimally scheduling the allocation of a set service providers to a defined set of service points, comprising:

a service point mechanism for collecting and processing a plurality of service point data parameters, said service point data parameters being not necessarily independent from one another;

a service provider mechanism for collecting and processing a plurality of service provider data parameters, said service point data parameters being not necessarily independent from one another;

a generic multi-layer scheduling mechanism for generating allocation schedules for allocating the set of service providers to the set of service points, said generic multi-layer scheduling mechanism employing a heuristic algorithm for creating an objective function relating to said plurality of service point data elements and said plurality of service provider data elements and generating therefrom said optimal allocation schedule.

2. The scheduling engine of Claim 1, wherein said generic multi-layer scheduling mechanism further comprises instructions for successively proceeding through increasingly optimal allocation schedules until a final optimal allocation schedule results.

3. The scheduling engine of Claim 1, wherein said generic multi-layer scheduling engine further comprises a genetic analysis mechanism for testing successive allocation schedules for verifying

improvement over previously generated allocation schedules.

4. The scheduling engine of Claim 3, further comprising a variable scoring model for changing said successive allocation schedules for accommodating different customer business aspects.

5. The scheduling engine of Claim 4, wherein said genetic analysis mechanism requires only two solutions for comparing to improve over previously generated allocation schedules independent of the type of employed heuristic algorithm.

6. The scheduling engine of Claim 1, wherein said genetic multi-layer scheduling mechanism further comprises a plurality of meta-heuristics for successively testing the optimality of a population of solutions for proceeding towards an optimal solution independent of linearity constraints.

7. A scheduling engine for processing a plurality of scheduling problems, comprising:

instructions for defining a set of inputs, control parameters, and mathematical cost models;

instructions for generating a set of initial starting conditions;

a scoring cost model evaluator for generating the state of an elite solution and guiding operations of said heuristic algorithm; and

said scoring model evaluation further for guiding the operation on the population of solutions regardless of nonlinearity or dependence among said set of inputs, control parameters, and mathematical cost models.

8. The scheduling engine of Claim 7, wherein said instructions for generating said set of initial starting conditions further comprises instructions for randomly generating said set of initial starting conditions.

9. The scheduling engine of Claim 7, wherein said instructions for generating said set of initial starting conditions further comprises instructions for receiving said set of initial starting conditions from an associated heuristic solution.

10. The scheduling engine of Claim 7, wherein said scoring model evaluator further comprises instructions for iteratively modifying said set of inputs for converging to an optimal solution.

11. A method for scheduling engine for optimally scheduling the allocation of a set service providers to a defined set of service points, comprising the steps of:

collecting and processing a plurality of service point data parameters, said data parameters being not necessarily independent from one another;

collecting and processing a plurality of service provider data parameters, said service point data parameters being not necessarily independent from one another; and

generating allocation schedules for allocating the set of service providers to the set of service points, said generic multi-layer scheduling mechanism employing a heuristic algorithm for creating an objective function relating to said plurality of service point

data elements and said plurality of service provider data elements and generating therefrom said optimal allocation schedule.

12. The method of Claim 11, wherein said generic step further comprises the step of successively proceeding through increasingly optimal allocation schedules until a final optimal allocation schedule results.

13. The method of Claim 11, wherein further comprising the step of testing successive allocation schedules to verify improvement over previously generated allocation schedules.

14. The method of Claim 13, further comprising the step of changing said successive allocation schedules for accommodating different customer business aspects.

15. The method of Claim 14, wherein said changing step requires only two solutions for comparing to improve over previously generated allocation schedules independent of the type of employed heuristic algorithm.

16. The method of Claim 11, further comprising the step of successively testing the optimality of a population of solutions for proceeding towards an optimal solution independent of linearity constraints.

17. A method algorithm for processing a plurality of scheduling problems comprising the steps of:

defining a set of inputs, control parameters, and mathematical cost models;

generating a set of initial starting conditions;

generating the state of an elite solution and guiding operations of said heuristic algorithm using a scoring cost evaluator; and

guiding the operation on the population of solutions regardless of nonlinearity or departure among said set of inputs, control parameters, and mathematical cost models using a scoring cost evaluator.

18. The method of Claim 17, wherein generating said set of initial starting conditions step further comprises the step of randomly generating said set of initial starting conditions.

19. The method of Claim 17, wherein generating said set of initial starting conditions step further comprises the step of receiving said set of initial starting conditions from an associated heuristic solution.

20. The method of Claim 17, scoring model evaluator further comprising the step of iteratively modifying said set of inputs for converging to an optimal solution.